

WHAT IS CLAIMED IS:

5

1. A recording-medium conveying device  
conveying a recording medium to an image recording part,  
the recording medium being separated and fed from a  
recording-medium feeding device, the recording-medium  
conveying device comprising:

10

a conveying belt wound around a driving roller  
and a driven roller so as to convey said recording  
medium to said image recording part, the conveying belt  
having an insulating layer formed at at least a side  
contacting said recording medium; and

15

a belt charging unit provided in contact with  
said conveying belt so as to charge said conveying belt  
with a positive charge and a negative charge alternately  
in a moving direction of said conveying belt by applying  
an AC bias to said conveying belt.

20

25

2. A recording-medium conveying device

Claims  
1-39  
proper  
for 271/275  
DHB

20/05/01 10:30:02

conveying a recording medium to an image recording part, the recording medium being separated and fed from a recording-medium feeding device by a separating unit thereof, the recording-medium conveying device

5 comprising:

a conveying belt wound around a driving roller and a driven roller so as to convey said recording medium to said image recording part, the conveying belt having a two-layer structure composed of an insulating  
10 layer formed at one side contacting said recording medium and a conductive layer formed at the other side not contacting said recording medium;

a belt charging unit provided in contact with said insulating layer in a vicinity of said separating  
15 unit so as to charge said insulating layer with a positive charge and a negative charge alternately in a moving direction of said conveying belt by applying an AC bias to said conveying belt; and

a pressing roller pressing said conveying belt  
20 against said driving roller by exerting an elastic force so as to prevent said conveying belt from slipping on said driving roller.

3. A recording-medium conveying device conveying a recording medium to an image recording part, the recording medium being separated and fed from a recording-medium feeding device by a separating unit  
5 thereof, the recording-medium conveying device comprising:

a conveying belt wound around a central part of a driving roller and a central part of a driven roller so as to convey said recording medium to said  
10 image recording part, the conveying belt being narrower than said recording medium, and having a two-layer structure composed of an insulating layer formed at one side contacting said recording medium and a conductive layer formed at the other side not contacting said  
15 recording medium;

conveyance guides provided at both sides of said conveying belt in a widthwise direction thereof in said image recording part, the conveyance guides having a plurality of ribs and recession grooves alternately,  
20 each of said ribs and said recession grooves being aligned along a conveying direction of said recording medium;

a belt charging unit provided in contact with said insulating layer in a vicinity of said separating  
25 unit so as to charge said insulating layer with a

20250101 10092701

positive charge and a negative charge alternately in a moving direction of said conveying belt by applying an AC bias to said conveying belt; and

5 a pressing roller pressing said conveying belt against said driving roller by exerting an elastic force so as to prevent said conveying belt from slipping on said driving roller.

10

4. The recording-medium conveying device as claimed in claim 2, wherein a surface of said driving roller is cured.

15

5. The recording-medium conveying device as  
20 claimed in claim 3, wherein a surface of said driving roller is cured.

25

10092701.030702

6. The recording-medium conveying device as claimed in claim 4, wherein the surface of said driving roller is cured by being coated with urethane.

5

7. The recording-medium conveying device as claimed in claim 5, wherein the surface of said driving roller is cured by being coated with urethane.

10

8. A recording-medium conveying device conveying a recording medium to an image recording part, the recording medium being separated and fed from a recording-medium feeding device by a separating unit thereof, the recording-medium conveying device comprising:

15

20

a conveying belt wound around a driving roller and a driven roller so as to convey said recording medium to said image recording part, the conveying belt having a two-layer structure composed of an insulating layer formed at one side contacting said recording

25

10092701-030702

medium and a conductive layer formed at the other side not contacting said recording medium; and

a belt charging unit provided in contact with said insulating layer in a vicinity of said separating unit so as to charge said insulating layer with a positive charge and a negative charge alternately in a moving direction of said conveying belt by applying an AC bias to said conveying belt,

wherein at least one of said driving roller and said driven roller is a grip roller having a plurality of projections.

15

9. A recording-medium conveying device conveying a recording medium to an image recording part, the recording medium being separated and fed from a recording-medium feeding device by a separating unit thereof, the recording-medium conveying device comprising:

a conveying belt wound around a central part of a driving roller and a central part of a driven roller so as to convey said recording medium to said image recording part, the conveying belt being narrower

25

10092701.030702

than said recording medium, and having a two-layer structure composed of an insulating layer formed at one side contacting said recording medium and a conductive layer formed at the other side not contacting said  
5 recording medium;

conveyance guides provided at both sides of said conveying belt in a widthwise direction thereof in said image recording part, the conveyance guides having a plurality of ribs and recession grooves alternately,  
10 each of said ribs and said recession grooves being aligned along a conveying direction of said recording medium; and

a belt charging unit provided in contact with said insulating layer in a vicinity of said separating  
15 unit so as to charge said insulating layer with a positive charge and a negative charge alternately in a moving direction of said conveying belt by applying an AC bias to said conveying belt,

wherein at least one of said driving roller  
20 and said driven roller is a grip roller having a plurality of projections.

10. A recording-medium conveying device  
conveying a recording medium to an image recording part,  
the recording medium being separated and fed from a  
recording-medium feeding device by a separating unit  
5 thereof, the recording-medium conveying device  
comprising:

a conveying belt wound around a driving roller  
and a driven roller so as to convey said recording  
medium to said image recording part, the conveying belt  
10 having a two-layer structure composed of an insulating  
layer formed at one side contacting said recording  
medium and a timing belt formed by a conductive layer at  
the other side not contacting said recording medium; and

a belt charging unit provided in contact with  
15 said insulating layer in a vicinity of said separating  
unit so as to charge said insulating layer with a  
positive charge and a negative charge alternately in a  
moving direction of said conveying belt by applying an  
AC bias to said conveying belt.

20

11. A recording-medium conveying device  
25 conveying a recording medium to an image recording part,

10092701.030702



the recording medium being separated and fed from a recording-medium feeding device by a separating unit thereof, the recording-medium conveying device comprising:

5           a conveying belt wound around a central part of a driving roller and a central part of a driven roller so as to convey said recording medium to said image recording part, the conveying belt being narrower than said recording medium, and having a two-layer  
10 structure composed of an insulating layer formed at one side contacting said recording medium and a timing belt formed by a conductive layer at the other side not contacting said recording medium; and

          conveyance guides provided at both sides of  
15 said conveying belt in a widthwise direction thereof in said image recording part, the conveyance guides having a plurality of ribs and recession grooves alternately, each of said ribs and said recession grooves being aligned along a conveying direction of said recording  
20 medium; and

          a belt charging unit provided in contact with said insulating layer in a vicinity of said separating unit so as to charge said insulating layer with a positive charge and a negative charge alternately in a  
25 moving direction of said conveying belt by applying an

10092701.030702

AC bias to said conveying belt.

5

12. The recording-medium conveying device as claimed in claim 10, wherein said timing belt is formed at at least a part of said other side of said conveying belt.

10

13. The recording-medium conveying device as claimed in claim 11, wherein said timing belt is formed at at least a part of said other side of said conveying belt.

15

20

14. The recording-medium conveying device as claimed in claim 2, wherein one of said driving roller and said driven roller positioned upstream in a conveying direction of said recording medium has a large

25

20200901030702

diameter, and the other of said driving roller and said driven roller positioned downstream in the conveying direction of said recording medium has a small diameter.

5

15. The recording-medium conveying device as claimed in claim 3, wherein one of said driving roller and said driven roller positioned upstream in the conveying direction of said recording medium has a large diameter, and the other of said driving roller and said driven roller positioned downstream in the conveying direction of said recording medium has a small diameter.

15

16. A recording-medium conveying device conveying a recording medium to an image recording part, the recording medium being separated and fed from a recording-medium feeding device, the recording-medium conveying device comprising:

a conveying belt wound around a driving roller and a driven roller, the driving roller being connected

25

10092701-030702

to a ground, so as to convey said recording medium to said image recording part, the conveying belt having an insulating layer formed at a side contacting said recording medium;

5 a belt charging unit provided opposite said driving roller at a position upstream in a revolving direction of said driving roller from a position at which said recording medium fed from said recording-medium feeding device contacts said conveying belt wound  
10 around said driving roller so as to charge said conveying belt with a positive charge and a negative charge alternately in a moving direction of said conveying belt by applying an AC bias to said conveying belt; and

15 a pressing roller provided opposite said driving roller at a position downstream in the revolving direction of said driving roller from said belt charging unit so as to press said recording medium stuck fast to said conveying belt closely to said conveying belt.

20

17. The recording-medium conveying device as  
25 claimed in claim 16, wherein the AC bias is impressed to

10092701.030702

said belt charging unit when said recording medium is conveyed.

5

18. The recording-medium conveying device as claimed in claim 17, wherein said AC bias is stopped being impressed to said belt charging unit when said recording medium is stopped being conveyed.

15

19. The recording-medium conveying device as claimed in claim 16, wherein the AC bias is impressed to said belt charging unit while said conveying belt is continuously revolved, before said recording medium is conveyed.

20

20. The recording-medium conveying device as claimed in claim 1, wherein said belt charging unit

10092701.030702

applies said AC bias to said conveying belt while said conveying belt conveys said recording medium, and said belt charging unit stops applying said AC bias to said conveying belt while said conveying belt stops conveying  
5 said recording medium.

10 21. The recording-medium conveying device as claimed in claim 1, wherein said belt charging unit applies said AC bias to said conveying belt while said conveying belt is continuously revolved, before said conveying belt conveys said recording medium.

15

22. The recording-medium conveying device as  
20 claimed in claim 1, wherein said conveying belt is formed of one layer of said insulating layer.

25

10092701.030702

23. The recording-medium conveying device as claimed in claim 1, wherein said conveying belt is formed of two layers composed of said insulating layer formed at one side contacting said recording medium and  
5 a conductive layer formed at the other side not contacting said recording medium.

10

24. The recording-medium conveying device as claimed in claim 1, wherein said insulating layer has a volume resistivity equal to or more than  $10^{12} \Omega\text{cm}$ .

15

25. The recording-medium conveying device as claimed in claim 1, further comprising conveyance guides  
20 provided at both sides of said conveying belt in a widthwise direction thereof so as to guide said recording medium, the conveying belt being formed narrower than said recording medium.

25

202501030702

26. The recording-medium conveying device as  
claimed in claim 25, wherein said conveyance guides  
comprise a plurality of ribs and recession grooves  
alternately, each of said ribs and said recession  
5 grooves being aligned along a conveying direction of  
said recording medium.

10

27. The recording-medium conveying device as  
claimed in claim 1, further comprising a pressing roller  
pressing said conveying belt against said driving roller  
by exerting an elastic force so as to prevent said  
15 conveying belt from slipping on said driving roller.

20

28. The recording-medium conveying device as  
claimed in claim 27, wherein said pressing roller is  
provided at a position downstream in a revolving  
direction of said driving roller.

25

10092701.030702



29. The recording-medium conveying device as claimed in claim 1, wherein at least said driving roller among said driving roller and said driven roller has a plurality of projections on a surface thereof.

5

30. The recording-medium conveying device as claimed in claim 1, wherein said conveying belt is formed of a timing belt.

15

31. A conveyance control device controlling a recording-medium conveying device conveying a recording medium to an image recording part, the recording medium being separated and fed from a recording-medium feeding device by a separating unit thereof, the recording-medium conveying device including:

a conveying belt wound around a driving roller and a driven roller so as to convey said recording medium to said image recording part, the conveying belt having a two-layer structure composed of an insulating

25

20250701 030702

layer formed at one side contacting said recording medium and a conductive layer formed at the other side not contacting said recording medium;

5 a belt charging unit provided in contact with said insulating layer in a vicinity of said separating unit so as to charge said insulating layer with a positive charge and a negative charge alternately in a moving direction of said conveying belt by applying an AC bias to said conveying belt; and

10 a pressing roller pressing said conveying belt against said driving roller by exerting an elastic force so as to prevent said conveying belt from slipping on said driving roller,

the conveyance control device comprising:

15 a binary scale provided on a part of said conveying belt along the moving direction thereof,

wherein one of a reflected light and a transmitted light from said binary scale is detected so as to control a revolving velocity and a stopping  
20 position of said driving roller.

25 32. A conveyance control device controlling a

10092701.030702

recording-medium conveying device conveying a recording medium to an image recording part, the recording medium being separated and fed from a recording-medium feeding device by a separating unit thereof, the recording-

5 medium conveying device including:

a conveying belt wound around a central part of a driving roller and a central part of a driven roller so as to convey said recording medium to said image recording part, the conveying belt being narrower  
10 than said recording medium, and having a two-layer structure composed of an insulating layer formed at one side contacting said recording medium and a conductive layer formed at the other side not contacting said recording medium;

15 conveyance guides provided at both sides of said conveying belt in a widthwise direction thereof in said image recording part, the conveyance guides having a plurality of ribs and recession grooves alternately, each of said ribs and said recession grooves being  
20 aligned along a conveying direction of said recording medium;

a belt charging unit provided in contact with said insulating layer in a vicinity of said separating unit so as to charge said insulating layer with a  
25 positive charge and a negative charge alternately in a

20250701 10092701.030702

moving direction of said conveying belt by applying an AC bias to said conveying belt; and

a pressing roller pressing said conveying belt against said driving roller by exerting an elastic force so as to prevent said conveying belt from slipping on said driving roller,

the conveyance control device comprising:

a binary scale provided on a part of said conveying belt along the moving direction thereof,

wherein one of a reflected light and a transmitted light from said binary scale is detected so as to control a revolving velocity and a stopping position of said driving roller.

15

33. The conveyance control device as claimed in claim 31, further comprising an optical sensor provided opposite a part of said conveying belt downstream from and near said driving roller so as to detect one of said reflected light and said transmitted light.

25

10092701.030702

10

15

25

37. A conveyance control device controlling a recording-medium conveying device conveying a recording medium to an image recording part, the recording medium being separated and fed from a recording-medium feeding device, the recording-medium conveying device including:

5 a conveying belt wound around a driving roller and a driven roller so as to convey said recording medium to said image recording part, the conveying belt having an insulating layer formed at at least a side  
10 contacting said recording medium; and

a belt charging unit provided in contact with said conveying belt so as to charge said conveying belt with a positive charge and a negative charge alternately in a moving direction of said conveying belt by applying  
15 an AC bias to said conveying belt,

the conveyance control device comprising:

a conveyance distance detecting unit detecting one of a conveyance speed and a conveyance distance of said conveying belt; and

20 a conveying-belt driving unit driving said driving roller,

wherein said conveying-belt driving unit is controlled according to one of said conveyance speed and said conveyance distance detected by said conveyance  
25 distance detecting unit.

10092701-030702  
2020E01-0226001

38. The conveyance control device as claimed in claim 37, wherein said conveyance distance detecting unit comprises:

5 a binary scale provided on one of an outer surface and an inner surface of said conveying belt; and a read sensor reading said binary scale, wherein said binary scale has pitches arranged at an interval corresponding to a value obtained by dividing a maximum resolution of an image to be recorded on said recording medium by  $n$ , where  $n$  is an integer larger than zero.

15

39. The conveyance control device as claimed in claim 37, wherein said conveyance distance detecting unit comprises an encoder provided on a rotary shaft of said driving roller,

20

wherein said driving roller has a diameter determined such that a conveyance distance of said conveying belt corresponding to one pulse output by said encoder becomes a value obtained by dividing a maximum resolution of an image to be recorded on said recording medium by  $n$ , where  $n$  is an integer larger than zero.

25

202050-10/2600T

40. An inkjet recording device comprising:

a recording head in an image recording part so as to record an image by jetting ink drops on a recording medium;

5 a recording-medium feeding device containing said recording medium, and separating and feeding said recording medium one by one therefrom; and

a recording-medium conveying device including:

a conveying belt wound around a driving roller  
10 and a driven roller so as to convey said recording medium to said image recording part, the conveying belt having an insulating layer formed at at least a side contacting said recording medium; and

a belt charging unit provided in contact with  
15 said conveying belt so as to charge said conveying belt with a positive charge and a negative charge alternately in a moving direction of said conveying belt by applying an AC bias to said conveying belt.

20

41. An inkjet recording device comprising:

a recording head mounted on a carriage in an  
25 image recording part so as to record an image by jetting

20200701.030702



a recording-medium feeding device containing  
said recording medium, and separating and feeding said  
recording medium one by one therefrom; and  
5 a recording-medium conveying device including:  
a conveying belt wound around a driving roller  
and a driven roller so as to convey said recording  
medium to said image recording part, the conveying belt  
having an insulating layer formed at at least a side  
0 contacting said recording medium; and

20                   42. An inkjet recording device comprising:  
                    a recording head mounted on a carriage in an  
                    image recording part so as to record an image by jetting  
                    ink drops on a recording medium;  
                    a recording-medium feeding device containing  
25                   said recording medium, and separating and feeding said

recording medium one by one therefrom by a separating unit thereof; and

a recording-medium conveying device including:

a conveying belt wound around a driving roller

5 and a driven roller so as to convey said recording medium to said image recording part, the conveying belt having a two-layer structure composed of an insulating layer formed at one side contacting said recording medium and a conductive layer formed at the other side  
10 not contacting said recording medium;

a belt charging unit provided in contact with said insulating layer in a vicinity of said separating unit so as to charge said insulating layer with a positive charge and a negative charge alternately in a  
15 moving direction of said conveying belt by applying an AC bias to said conveying belt; and

a pressing roller pressing said conveying belt against said driving roller by exerting an elastic force so as to prevent said conveying belt from slipping on  
20 said driving roller.

25 43. An inkjet recording device comprising:

20250701-030702

a recording head mounted on a carriage in an image recording part so as to record an image by jetting ink drops on a recording medium;

5 a recording-medium feeding device containing said recording medium, and separating and feeding said recording medium one by one therefrom by a separating unit thereof; and

a recording-medium conveying device including:

10 a conveying belt wound around a central part of a driving roller and a central part of a driven roller so as to convey said recording medium to said image recording part, the conveying belt being narrower than said recording medium, and having a two-layer structure composed of an insulating layer formed at one  
15 side contacting said recording medium and a conductive layer formed at the other side not contacting said recording medium;

conveyance guides provided at both sides of said conveying belt in a widthwise direction thereof in  
20 said image recording part, the conveyance guides having a plurality of ribs and recession grooves alternately, each of said ribs and said recession grooves being aligned along a conveying direction of said recording medium;

25 a belt charging unit provided in contact with

10092701.030702

said insulating layer in a vicinity of said separating unit so as to charge said insulating layer with a positive charge and a negative charge alternately in a moving direction of said conveying belt by applying an

5 AC bias to said conveying belt; and

a pressing roller pressing said conveying belt against said driving roller by exerting an elastic force so as to prevent said conveying belt from slipping on said driving roller.

10

44. The inkjet recording device as claimed in  
15 claim 42, wherein a surface of said driving roller is cured.

20

45. The inkjet recording device as claimed in claim 43, wherein a surface of said driving roller is cured.

25

20250701-030702

46. The inkjet recording device as claimed in claim 44, wherein the surface of said driving roller is cured by being coated with urethane.

5

47. The inkjet recording device as claimed in claim 45, wherein the surface of said driving roller is cured by being coated with urethane.

10

48. An inkjet recording device comprising:

15

a recording head mounted on a carriage in an image recording part so as to record an image by jetting ink drops on a recording medium;

a recording-medium feeding device containing said recording medium, and separating and feeding said recording medium one by one therefrom by a separating unit thereof; and

20

a recording-medium conveying device including:

a conveying belt wound around a driving roller

and a driven roller so as to convey said recording

25

202020701.030702

medium to said image recording part, the conveying belt having a two-layer structure composed of an insulating layer formed at one side contacting said recording medium and a conductive layer formed at the other side not contacting said recording medium; and

a belt charging unit provided in contact with said insulating layer in a vicinity of said separating unit so as to charge said insulating layer with a positive charge and a negative charge alternately in a moving direction of said conveying belt by applying an AC bias to said conveying belt,

wherein at least one of said driving roller and said driven roller is a grip roller having a plurality of projections.

15

49. An inkjet recording device comprising:  
a recording head mounted on a carriage in an image recording part so as to record an image by jetting ink drops on a recording medium;

a recording-medium feeding device containing said recording medium, and separating and feeding said recording medium one by one therefrom by a separating

25

20200201.030702

unit thereof; and

a recording-medium conveying device including:

5 a conveying belt wound around a central part  
of a driving roller and a central part of a driven  
roller so as to convey said recording medium to said  
image recording part, the conveying belt being narrower  
than said recording medium, and having a two-layer  
structure composed of an insulating layer formed at one  
side contacting said recording medium and a conductive  
10 layer formed at the other side not contacting said  
recording medium;

conveyance guides provided at both sides of  
said conveying belt in a widthwise direction thereof in  
said image recording part, the conveyance guides having  
15 a plurality of ribs and recession grooves alternately,  
each of said ribs and said recession grooves being  
aligned along a conveying direction of said recording  
medium; and

a belt charging unit provided in contact with  
20 said insulating layer in a vicinity of said separating  
unit so as to charge said insulating layer with a  
positive charge and a negative charge alternately in a  
moving direction of said conveying belt by applying an  
AC bias to said conveying belt,

25 wherein at least one of said driving roller

10092701.030702

and said driven roller is a grip roller having a plurality of projections.

5

50. An inkjet recording device comprising:

a recording head mounted on a carriage in an image recording part so as to record an image by jetting  
10 ink drops on a recording medium;

a recording-medium feeding device containing said recording medium, and separating and feeding said recording medium one by one therefrom by a separating unit thereof; and

15 a recording-medium conveying device including:

a conveying belt wound around a driving roller and a driven roller so as to convey said recording medium to said image recording part, the conveying belt having a two-layer structure composed of an insulating  
20 layer formed at one side contacting said recording medium and a timing belt formed by a conductive layer at the other side not contacting said recording medium; and

a belt charging unit provided in contact with said insulating layer in a vicinity of said separating  
25 unit so as to charge said insulating layer with a

10092701.030702



positive charge and a negative charge alternately in a moving direction of said conveying belt by applying an AC bias to said conveying belt.

5

51. An inkjet recording device comprising:

10 a recording head mounted on a carriage in an image recording part so as to record an image by jetting ink drops on a recording medium;

15 a recording-medium feeding device containing said recording medium, and separating and feeding said recording medium one by one therefrom by a separating unit thereof; and

a recording-medium conveying device including:

20 a conveying belt wound around a central part of a driving roller and a central part of a driven roller so as to convey said recording medium to said image recording part, the conveying belt being narrower than said recording medium, and having a two-layer structure composed of an insulating layer formed at one side contacting said recording medium and a timing belt formed by a conductive layer at the other side not  
25 contacting said recording medium; and

10092701.030702

conveyance guides provided at both sides of  
said conveying belt in a widthwise direction thereof in  
said image recording part, the conveyance guides having  
a plurality of ribs and recession grooves alternately,  
5 each of said ribs and said recession grooves being  
aligned along a conveying direction of said recording  
medium; and

a belt charging unit provided in contact with  
said insulating layer in a vicinity of said separating  
10 unit so as to charge said insulating layer with a  
positive charge and a negative charge alternately in a  
moving direction of said conveying belt by applying an  
AC bias to said conveying belt.

15

52. The inkjet recording device as claimed in  
claim 50, wherein said timing belt is formed at at least  
20 a part of said other side of said conveying belt.

25

53. The inkjet recording device as claimed in

20200801 10092701.030702

claim 51, wherein said timing belt is formed at at least a part of said other side of said conveying belt.

5

54. The inkjet recording device as claimed in claim 42, wherein one of said driving roller and said driven roller positioned upstream in a conveying direction of said recording medium has a large diameter, and the other of said driving roller and said driven roller positioned downstream in the conveying direction of said recording medium has a small diameter.

15

55. The inkjet recording device as claimed in claim 43, wherein one of said driving roller and said driven roller positioned upstream in the conveying direction of said recording medium has a large diameter, and the other of said driving roller and said driven roller positioned downstream in the conveying direction of said recording medium has a small diameter.

25

20250701-030702

56. The inkjet recording device as claimed in claim 42, further comprising a binary scale provided on a part of said conveying belt along the moving direction thereof,

5 wherein one of a reflected light and a transmitted light from said binary scale is detected so as to control a revolving velocity and a stopping position of said driving roller.

10

57. The inkjet recording device as claimed in claim 43, further comprising a binary scale provided on a part of said conveying belt along the moving direction thereof,

15 wherein one of a reflected light and a transmitted light from said binary scale is detected so as to control a revolving velocity and a stopping position of said driving roller.

20

25

58. An inkjet recording device comprising:

10092701-030702

a recording head mounted on a carriage in an image recording part so as to record an image by jetting ink drops on a recording medium;

a recording-medium feeding device containing  
5 said recording medium, and separating and feeding said recording medium one by one therefrom; and

a recording-medium conveying device including:

a conveying belt wound around a driving roller and a driven roller, the driving roller being connected  
10 to a ground, so as to convey said recording medium to said image recording part, the conveying belt having an insulating layer formed at a side contacting said recording medium;

a belt charging unit provided opposite said  
15 driving roller at a position upstream in a revolving direction of said driving roller from a position at which said recording medium fed from said recording-medium feeding device contacts said conveying belt wound around said driving roller so as to charge said  
20 conveying belt with a positive charge and a negative charge alternately in a moving direction of said conveying belt by applying an AC bias to said conveying belt; and

a pressing roller provided opposite said  
25 driving roller at a position downstream in the revolving

10092701-030702

direction of said driving roller from said belt charging unit so as to press said recording medium stuck fast to said conveying belt closely to said conveying belt.

5

59. The inkjet recording device as claimed in claim 41, wherein said belt charging unit applies said AC bias to said conveying belt while said conveying belt conveys said recording medium, and said belt charging unit stops applying said AC bias to said conveying belt while said conveying belt stops conveying said recording medium.

15

60. The inkjet recording device as claimed in claim 41, wherein said belt charging unit applies said AC bias to said conveying belt while said conveying belt is continuously revolved, before said conveying belt conveys said recording medium.

25

10092701.030700

61. The inkjet recording device as claimed in claim 41, wherein said conveying belt is formed of one layer of said insulating layer.

5

62. The inkjet recording device as claimed in claim 41, wherein said conveying belt is formed of two layers composed of said insulating layer formed at one side contacting said recording medium and a conductive layer formed at the other side not contacting said recording medium.

10  
15

63. The inkjet recording device as claimed in claim 41, wherein said insulating layer has a volume resistivity equal to or more than  $10^{12} \Omega\text{cm}$ .

20  
25

64. The inkjet recording device as claimed in

10092701-030702  
20200510 10:22:50

10.

15

25



from slipping on said driving roller.

5

67. The inkjet recording device as claimed in claim 66, wherein said pressing roller is provided at a position downstream in a revolving direction of said driving roller.

10

68. The inkjet recording device as claimed in claim 41, wherein at least said driving roller among said driving roller and said driven roller has a plurality of projections on a surface thereof.

20

69. The inkjet recording device as claimed in claim 41, wherein said conveying belt is formed of a timing belt.

25

20250701 10:26:00

70. The inkjet recording device as claimed in claim 41, further comprising:

a conveyance distance detecting unit detecting one of a conveyance speed and a conveyance distance of  
5 said conveying belt; and

a conveying-belt driving unit driving said driving roller,

wherein said conveying-belt driving unit is controlled according to one of said conveyance speed and  
10 said conveyance distance detected by said conveyance distance detecting unit.

15

71. The inkjet recording device as claimed in claim 70, wherein said conveyance distance detecting unit comprises:

a binary scale provided on one of an outer  
20 surface and an inner surface of said conveying belt; and

a read sensor reading said binary scale,

wherein said binary scale has pitches arranged at an interval corresponding to a value obtained by dividing a maximum resolution of an image to be recorded  
25 on said recording medium by  $n$ , where  $n$  is an integer

10092701.030702  
20200801 10:26:00

larger than zero.

5

72. The inkjet recording device as claimed in claim 70, wherein said conveyance distance detecting unit comprises an encoder provided on a rotary shaft of said driving roller,

10

wherein said driving roller has a diameter determined such that a conveyance distance of said conveying belt corresponding to one pulse output by said encoder becomes a value obtained by dividing a maximum resolution of an image to be recorded on said recording

15

medium by  $n$ , where  $n$  is an integer larger than zero.

20250701.030702